

# (12) UK Patent Application (19) GB (11) 2 274 733 (13) A

(43) Date of A Publication 03.08.1994

(21) Application No 9225904.3

(22) Date of Filing 11.12.1992

(71) Applicant(s)

John Edward Shouler  
E C Tronics (UK) Ltd, Unit 7A,  
136-140 Old Shoreham Road, HOVE, East Sussex,  
BN3 7BD, United Kingdom

(72) Inventor(s)

John Edward Shouler

(74) Agent and/or Address for Service

Urquhart-Dykes & Lord  
Cardiff Business Technology Centre,  
Senghennydd Road, CARDIFF, CF2 4AY,  
United Kingdom

(51) INT CL<sup>5</sup>  
G09F 27/00

(52) UK CL (Edition M )  
G5C CJA CJD

(56) Documents Cited  
GB 2232520 A EP 0303568 A US 4853678 A

(58) Field of Search  
UK CL (Edition L ) G5C CAB CAC CAD CAE CAX CBB  
CJA CJE CJX  
INT CL<sup>5</sup> G09F  
Online databases: W.P.I.

(54) Audio visual mirror

(57) A mirror unit comprises a half-silvered mirror and transparencies which are illuminated from behind the mirror in response to actuation by a detector which senses the presence of a person: the transparencies are illuminated in a preprogrammed sequence and this visual presentation is accompanied by an audio presentation.

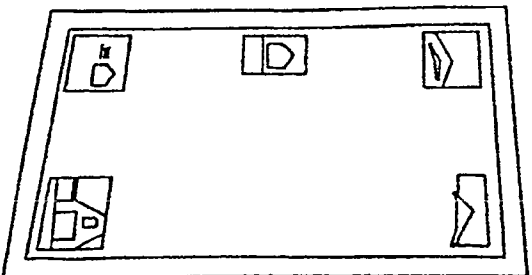
At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1990.

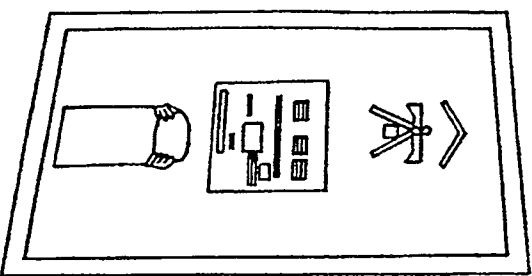
At least one of these pages has been prepared from an original which was unsuitable for direct photoreproduction.

GB 2 274 733 A

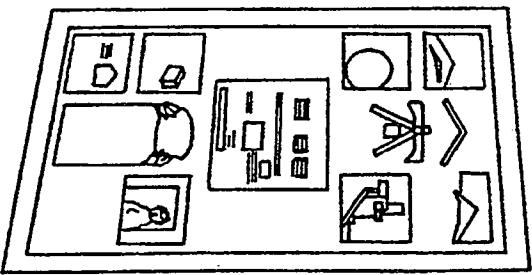
1/1



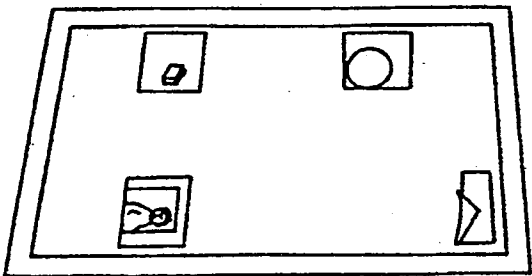
e.g. start



after 3 sec.



after 6 sec.



after 9 sec. etc.

1/1

AUDIO-VISUAL MIRRORPRODUCT SPECIFICATION

## ISSUE A

## 1 FUNCTIONAL DESCRIPTION

The Audio-Visual mirror is a wall mounted unit, having the appearance of a normal mirror, but able to present advertising material in the form of illuminated colour transparencies which are seen through the half-silvered surface of the mirror. The visual presentation is accompanied by speech and/or music played from an audio cassette tape.

This sequence of events is triggered from a passive infra-red detector which senses changes in body heat radiation from a person standing near the front of the mirror, ie it responds to body movement.

The order and timing of the sequence in which the lamps used to illuminate the transparencies are turned on and off are controlled by signals stored on the cassette tape, and are fully programmable by the user. Thus each set of transparencies and corresponding cassette tape can be produced to suit customer requirements.

The sequence is terminated when the tape has played out. If at this time the same person (or a different person) is still standing in front of the mirror, the sequence starts again at the beginning, otherwise the mirror remains dormant until triggered again.

## 2 CONSTITUENT PARTS

## 2.1 CASE ASSEMBLY

This is the main structural assembly of the case and hinged door frame carrying the mirror. The case is divided internally into display compartments and the electronics compartments.

The display compartments contain lamp fittings for transparency illumination, and these are wired back to the power electronics compartment. The case assembly also has a panel mounted IEC plug for connecting the mains supply (L, N and E), and the output from this is routed via an interlock switch which is open circuit when the mirror/door is open. The mains wiring then continues into the power electronics compartment. The mirror/door is fitted with a key operated lock to restrict access.

## 2.2 ELECTRONICS UNIT

The electronics are divided into two parts which mount in the compartments on either side of the central product compartment. One part consists of the DC power supplies and the lamp driving triac circuits. The other part consists of the control circuit, audio cassette player and passive infra-red detector.

### 3 POWER SOURCE

AC mains at 50 or 60 Hz; voltage range 209V to 231V.  
The unit must be earthed.

### 4 EXTERNAL DIMENSIONS

Approximately 100 cm high, 82 cm wide and 10 cm deep.

### 5 TRANSPARENCY SIZES

There are ten compartments for illuminating transparencies, sized as follows:

2 transparencies 30.5 cm x 20 cm.

8 transparencies 14 cm x 20 cm.

The transparencies are mounted on an opal white acrylic diffuser panel behind the mirror door.

### 6 LAMPS

A Transparency Lamps:-  
200W/220V linear tungsten halogen with R7S caps

B Product Compartment:-  
50W/12V tungsten halogen display lamp with 50mm open dichroic mirror

### 7 SOUND

Pseudo stereo from a mono recording at 2 x 2 watts output using one speaker mounted in each of the vertical sides.

Frequency Range: 150 Hz to 10 KHz

Level Setting: By internal preset potentiometer, adjustable by the customer.

Sound is muted if movement detection ceases.

## 8 TAPE FORMAT

Endless loop stereo audio cassette tape. The LH channel is used for speech and music (mono) recording and the RH channel for light sequence control signals. Dolby noise reduction techniques are not employed.

The cassette mechanism will be a personal stereo type, employing an endless loop audio cassette with the programme recorded once (or possibly several times sequentially, depending on the playing time) on one side of the tape.

Programme Duration: Depends on playing time (or playing time divided by number of repeats).

Lamp Control: By multiple frequency tones coded to switch lamps and stop the tape at appropriate times. The product compartment lamp is on all the while the tape runs. The transparency lamps are programmed to be on one at a time in sequence.

The occurrence of a lamp code switches the corresponding lamp ON and the previous lamp OFF. The STOP codes ends the sequence and stops the tape.

## 9 I R DETECTOR RESPONSE

Typically 1.5m detection distance over  $\pm 50^\circ$  angle.

## 10 SAFETY

Door interlock switch isolates mains from lamps and control electronics when mirror door is opened; this door is normally kept locked.

The unit is designed to meet the requirements of IEC950 for class 1 equipment.

Note that the unit is not intended to be suitable for installations in washrooms or similar sites where special safety regulations may apply.

## 11 ELECTROMAGNETIC COMPATABILITY (EMC)

The unit is designed to meet the emission requirements of EN 50 081-1 for class A equipment, and the immunity requirements of EN 50 082-1.

## 12 ENVIRONMENTAL

Working Ambient Temperature Range: 5 to 35°C  
Storage Ambient Temperature Range: -25 to 50°C  
Relative Humidity: 90% max.

# THE MIRROR - THE MEDIUM FOR LIVING ADVERTISEMENTS

<u>Possibilities of use</u>	<u>Function</u>	<u>Technical data</u>
<ul style="list-style-type: none"> <li>• Sales rooms</li> <li>• Supermarkets</li> <li>• Exhibition halls</li> <li>• Hotels and restaurants</li> <li>• Display windows</li> <li>• Airports/Train stations</li> <li>• Fair booths and many, many more</li> </ul>	<ul style="list-style-type: none"> <li>• The advertising-mirror is computer-controlled. That means high operational security due to digital processing.</li> <li>• The image sequence with 10 illuminated images and the illumination of the product sections is actuated by a sensor.</li> <li>• A stereo cassette recorder with a loop-cassette controls the synchronous image and sound sequence.</li> </ul>	<ul style="list-style-type: none"> <li>• Advertising-mirror</li> <li>Height: 80 cm</li> <li>Width: 60 cm</li> <li>Depth: 14 cm</li> <li>Weight: 12 kg</li> <li>• Effective range of the sensor 0.50 - 6m.</li> <li>• 2 loudspeakers</li> <li>• 10 image sections</li> <li>• Product sections</li> <li>Dimensions: 27 x 19 x 10 cm</li> <li>• Made in accordance with VDE.</li> </ul>
<u>Product features</u>	<u>MK 2/3 Version</u>	<u>Accessories</u>
<ul style="list-style-type: none"> <li>• Easy handling</li> <li>• Safety due to electronic self-testing</li> <li>• Thermal supervision of the lighting</li> <li>• Quick program and image change</li> <li>• Cassettes can be programmed by a PC</li> <li>• Easy to service</li> <li>• Ornamental design protection</li> </ul>	<ul style="list-style-type: none"> <li>(1) Neon cold lights</li> <li>(2) 10 section "Duratrans" image change.</li> <li>(3) Possible "roller blind" inc 50 images.</li> <li>(4) Voice chip as opposed to cassette.</li> </ul>	<ul style="list-style-type: none"> <li>• Display stands</li> <li>• Computer with monitor and software</li> <li>• Service set</li> <li>• Flat loudspeaker</li> <li>• Diverse displays</li> <li>• Service contract</li> </ul>

CLAIMS

1. Product programmed and set up by computer and is thus Computerised.
2. Multiple production panel, the inner being compartmentalised using a double skin with a variety of external finishes, such as aluminium, leather grain, sand effect, etc.
3. Product produced in a flame retardant material to underwriters laboratory test UL94V0.
4. Optional "voice chip" as opposed to cassette.
5. Internal and external dimensions are variable, thus a smaller unit 60cm X 35cm can be produced for the domestic home marketplace.
6. Optional "Neon Technology" as opposed to "Halogen".
7. Parabolic curve will be incorporated in late 1993 to facilitate up to 36 images via a slide carousel.

-7-

**Patents Act 1977**  
**Examiner's report to the Comptroller under**  
**Section 17 (The Search Report)**

Application number  
 GB 9225904.3

**Relevant Technical fields**

(i) UK CI (Edition L )G5C (CAB, CAC, CAD, CAE, CAX,  
 CBB, CJA, CJE, CJX)

(ii) Int CI (Edition 5 ) G09F

Search Examiner

R A H CASLING

**Databases (see over)**

(i) UK Patent Office

(ii) ONLINE DATABASES: WPI

Date of Search

6 JANUARY 1993

Documents considered relevant following a search in respect of claims 1 TO 7

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
Y	GB 2232520 A (BLAKECARE) see page 6 line 9 to page 9 line 18	Claim 1 at least
X	EP 0303568 A1 (GROSFO) see 2 line 37 et seq and particularly 3 line 28	Claim 1 at least
Y	US 4853678 (BISHOP) see 2 lines 25 to 68 and 4 line 47 to 4 line 56	Claim 1 at least



Category	Identity of document and relevant passages -8-	Relev to claim(s)

#### Categories of documents

**X:** Document indicating lack of novelty or of inventive step.

**Y:** Document indicating lack of inventive step if combined with one or more other documents of the same category.

**A:** Document indicating technological background and/or state of the art.

**P:** Document published on or after the declared priority date but before the filing date of the present application.

**E:** Patent document published on or after, but with priority date earlier than, the filing date of the present application.

**&:** Member of the same patent family, corresponding document.

**Databases:** The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).